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EXAMINER

RIVELL, JOHN A

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/992,079
Filing Date: November 19, 2001
Appellant(s): ROTH, ROBERT A.

MAILED

OCT 18 2005

Group 3700

Daniel H. Bliss
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed July 25, 2005 appealing from the Office action mailed December 28, 2004.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

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| | | |
|-----------|-----------|---------|
| 4,938,254 | Gimby | 07-1990 |
| 3,234,959 | Feinberg | 02-1966 |
| 3,936,243 | Gakenholz | 02-1976 |

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-15 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hutchings in view of Gimby, Feinberg and Gakenholz.

The patent to Hutchings discloses "... an outlet member (9) having a first passageway therethrough; a valve housing (13) disposed in said first passageway of said outlet member (9); a valve seat (15) formed on an interior surface of said valve housing...; a valve member (11, 16) disposed in said valve housing having an end adjacent said valve seat with (a, as shown in fig. 1, rectangular) groove having a generally (rectangular) cross-sectional shape extending radially into said end including a seal (20) disposed in said groove, said valve member having a closed position (fig. 2) in which said seal (20) engages said valve seat (15) to prevent (fluid) from flowing through said outlet member and an open position (fig. 3) to allow (fluid) to flow through said outlet member; a spring (21) disposed about said valve member and located axially between said valve seat (15) and one end of said valve housing to urge said valve member toward said valve seat; and said valve member having a (plurality of) outlet port(s) (19) disposed below ("below" being a relative term. Here both the claimed and

reference device have the outlet port disposed in the same relative position on the valve element) said groove and located axially between said valve seat (15) and the one end of said housing when said valve member is in said closed position to prevent (fluid) flow and to allow (fluid) flow when said valve member is in said open position" as recited in claim 11.

Thus the patent to Hutchings discloses all the claimed features with the exception of having utility in combination with a "fuel pump" thus controlling "fuel flow" from the fuel pump to the engine, a valve seat "having a generally frusta-conical cross-sectional shape", a "circular" cross sectional groove with a complementary circular seal element as well as "a single outlet port" in the valve member.

Firstly, the patent to Gimby discloses that it is known in the art to employ an elastomeric seal at elastomeric O-ring 18 (column 2, lines 65-68) as a seal element on a reciprocating hollow valve element 34 including axial 26 and radial 28 paths, seated within a complementary circular groove in the valve head, for the purpose of withstanding repeated use yet maintaining fluid tight closure of the valve. Additionally, Gimby discloses a valve seat at E "having a generally frusta-conical cross sectional shape" for the purpose of providing a larger area valve seat on which the valve seal, such as at the sealing O-ring 18 of Gimby, is seated maintaining fluid tight closure of the valve.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Hutchings an elastomeric material seal element seated within a complementary circular groove in the valve head in place of the apparent square edged, fibre washer seal element 20 of Hutchings for the purpose of withstanding repeated use yet maintaining fluid tight closure of the valve and to provide a "generally frusta-conical cross-sectional shape" to the valve seat surface of Hutchings

for the purpose of providing a larger area valve seat on which the valve seal, such as at the sealing O-ring 18 of Gimby, is seated maintaining fluid tight closure of the valve as recognized by Gimby.

Secondly, the patent to Feinberg discloses that it is known in the art to employ a single radial outlet port 35, or 36 in a reciprocating valve member conducting fluid flow from a hollow interior of the valve member to the exterior of the valve member upon the valve member moving to an open position for the purpose of providing a designed flow rate through the valve (column 3, lines 24-41).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Hutchings a single port of designed size in place of the plurality of radial ports 19 therein for the purpose of providing a designed flow rate through the valve as recognized by Feinberg.

Thirdly, Gakenholz discloses that it is known in the art to employ, in combination, a fuel pump device shown generally at inlet 13, pump section at 11 and an outlet section generally at 10 including an outlet check valve mechanism at 29 for the purpose of strictly feeding fuel in one direction only to an engine.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ the device of Hutchings, as modified by Gimby and Feinberg, in combination with a fuel feed pump of an engine as an outlet check valve from the fuel pump for the purpose of strictly feeding fuel in one direction only to an engine as recognized by Gakenholz.

Regarding claim 12, in Hutchings "said valve housing (13) has a second passageway (12) extending axially therethrough to receive said stem (11)" as recited.

Regarding claim 13, in Hutchings "said valve housing (13) has an enlarged opening at one end (at the right end) of said passageway (12)" as recited.

Regarding claim 14, in Hutchings "said valve member (tubular member 11) has a flow port (the interior bore) extending axially into one end thereof" as recited.

Regarding claim 15, in Hutchings "said outlet port(s 19) extend radially through said valve member (11) and communicates with said flow port" as recited. In the device of the combination, the "single outlet port taught by Feinberg will "extend radially" as recited.

Regarding claim 17, in Hutchings "said spring (21) comprises a coil spring" as recited.

Regarding claim 18, in Hutchings, as modified by Gimby, "said seal is made of elastomeric material" as recited.

Regarding claim 19, Gakenholz clearly discloses the combination including a "fuel pump comprising; a pump section (at the left end of the housing 11 including the pumping elements 27) at one axial end; a motor section (at motor armature 17); an outlet section (10) adjacent said motor section at the other axial end, said outlet section including an outlet member (one way check valve 29) having a passageway therethrough" as recited.

Regarding claim 20, in Hutchings, "said valve member (tubular member 11) has a flow port (the interior bore therethrough) extending axially into one end thereof and said outlet port (s 19) extends radially through said valve member and communicates with said flow port" as recited. In the device of the combination a "single outlet port (will) extend radially through said valve member and communicate with said flow port" as taught by Gimby, as recited.

(10) Response to Argument

In response to appellant's arguments that Hutchings, Gimby, Feinberg and Gakenholz lack "a fuel pump having a valve member with a single outlet port disposed

below a groove thereof and located axially between a valve seat and one end of a valve housing when the valve member is in a closed position to prevent fuel flow and to allow fuel flow when the valve member is in an open position" one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

It is agreed that each reference individually lacks certain claimed features. Anticipation by the reference of all of the claimed features is not required for a reference to be considered proper under 35 U.S.C. §103(a).

Here however, under 35 U.S.C §103(a), Hutchings is used to illustrate known check valve devices which disclose "an outlet member (9) having a first passageway therethrough; a valve housing (13) disposed in said first passageway of said outlet member (9); a valve seat (15) formed on an interior surface of said valve housing; a valve member (11, 16) disposed in said valve housing having an end adjacent said valve seat with (a, as shown in fig. 1, rectangular) groove having a generally (rectangular) cross-sectional shape extending radially into said end including a seal (20) disposed in said groove, said valve member having a closed position (fig. 2) in which said seal (20) engages said valve seat (15) to prevent (fluid) from flowing through said outlet member and an open position (fig. 3) to allow (fluid) to flow through said outlet member; a spring (21) disposed about said valve member and located axially between said valve seat (15) and one end of said valve housing to urge said valve member toward said valve seat; and said valve member having a (plurality of) outlet port(s) (19) disposed below ("below" being a relative term. Here both the claimed and reference device have the outlet port disposed in the same relative position on the valve element) said groove and located axially between said valve seat (15) and the one end of said

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housing when said valve member is in said closed position to prevent (fluid) flow and to allow (fluid) flow when said valve member is in said open position” as recited in claim 11.

Gimby is used to illustrate that it is known in the check valve art to employ a circular groove in a valve head receiving a circular elastomeric seal element therein for repeated use of the valve e.g. opening and closing and to employ a “frusta-conical” shaped valve seat for the purpose of providing a larger area valve seat on which the valve seal is seated maintaining fluid tight closure of the valve.

Gakenholz is used to illustrate that it is known in the check valve art to employ a check valve device 28, located in the outlet conduit of a fuel pump 22 of a vehicle leading to an engine 26 of the vehicle for the purpose of preventing backflow of fuel from the engine to the fuel pump.

Feinberg is used to illustrate that it is known in the check valve art to employ a single radial outlet port 35, or 36 in a reciprocating valve member conducting fluid flow from a hollow interior of the valve member to the exterior of the valve member upon the valve member moving to an open position for the purpose of providing a designed flow rate through the valve.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, as set forth above, Gimby is used for the reasonable suggestion to one of ordinary skill in the art the employment of a circular groove seating a circular elastomeric seal element therein in a valve head to withstand repeated opening and closing and to employ a "frusta-conical" shaped valve seat for the purpose of providing a larger area valve seat on which the valve seal is seated maintaining fluid tight closure of the valve.

Feinberg is used for the reasonable suggestion to one of ordinary skill in the art the utility of a single valve port in a hollow sleeve type reciprocating valve element so that a designed flow rate, determined by the size of the single hole, is employed in a check valve to limit the flow rate in check valve flow devices.

Gakenholz is used for the reasonable suggestion to one of ordinary skill in the art the utility of the valve element of Hutchings in the environment of a fuel pump feeding fuel to an engine such that the fuel flow from the pump to the engine, in the communication conduit, is one way as provided for by the teaching in Gakenholz of a one way check valve in the fuel conducting line.

The argument purporting no reason to combine is believed not well taken in view of the reasons for employing the respective structural elements being 1) specific by the Examiner in the rejection and 2) taken from the respective references which disclose the structure.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a

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reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to the newly raised argument that neither of the references teach

“a fuel pump having a “single outlet port disposed below a groove thereof and located axially between a valve seat and one end of a valve housing when the valve member is in a closed position to prevent fuel flow and to allow fuel flow when the valve member is in an open position (for the purpose of solving the problem of) eddy currents (which) tend to create a low pressure on one side of a pintel of a check valve having two outlet ports being opposed or 180 degrees apart. This low-pressure area causes the pintel to tip toward this low pressure. Once the pintel moves toward the low-pressure area, the low-pressure area alternates to the opposite side of the pintel. This causes the pintel to immediately move back one hundred eighty degrees (180°) from its original direction of travel. As a result, the pintel is constantly trying to reach positional equilibrium, causing the pintel to oscillate and produce objectionable noise”

is unpersuasive in support of the position that the reference to Feinberg specifically does not disclose a single port in the hollow piston type of check valve analogous to that of the instant application. There is also no requisite that the structural elements of the claims that are found in other references be for the same purpose as that of the disclosure of the instant application. Additionally, it is believed that, as disclosed in Feinberg, the corrective measures brought on by the employment of a single port in the hollow piston type valve as disclosed in the application are essentially those, albeit latent, offered by the disclosed single port in the hollow piston type reciprocating check valve disclosed by Feinberg.

Pertaining to claims 12-15, 17 and 18, appellant merely asserts that there is no teaching of the features of these claims by reciting the language of each claim. Rather than repeat the explanation, note the particular explanation given for each claim above in the Grounds of Rejection portion of this response.

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Regarding claims 19 and 20, appellant merely repeats all the arguments made concerning claims 11-15, 17 and 18. Accordingly, all the comments above, including the detailed explanation concerning claims 19 and 20 in the Grounds of Rejection portion of this response apply here as well. Additionally, regarding claim 20, appellant merely asserts that there is no teaching of the features of this claim by reciting the language of the claim. Rather than repeat the explanation, note the particular explanation given for claim 20 above in the Grounds of Rejection portion of this response.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

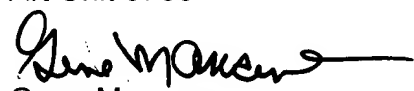
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


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